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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,257	02/03/2004	Antonino Cattaneo	18396/2272	2419

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EXAMINER	
SIMS, JASON M	

ART UNIT	PAPER NUMBER
1631	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/771,257	CATTANEO ET AL.	
	Examiner	Art Unit	
	Jason M. Sims	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-19* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-2, drawn to a method of identifying a consensus sequence for an intercellular antibody involving creating a database, classified in class 702, subclass 20.

II. Claims 3-5, drawn to drawn to a method of identifying a consensus sequence for an intercellular antibody involving constructing frequency distributions, classified in class 702, subclass 20. If this group is elected, then the below summarized two specie elections are also required.

III. Claim 6, drawn to a method of predicting whether an antibody is a functioning intracellular antibody involving calculating the difference between the mean value of the VIDA distribution and the product between D and the standard deviation of the VIDA distribution, obtaining the parameter S_{intra}, classified in class 702, subclass 20.

IV. Claims 7-9, drawn to a method of conferring upon an immunoglobulin molecule the ability to function within an intracellular antibody involving modifying, by site-specific mutagensis, at least one amino acid residue located in position defined by said optimum ICS, classified in class 702, subclass 20.

V. Claim 10, drawn to an intracellularly binding immunoglobulin molecule, classified in class 702, subclass 20. If this group is elected, then the below summarized specie election is also required.

VI. Claim 11, drawn to a method of selectively binding to a ligand in an intracellular environment involving contacting a molecule comprising a consensus sequence with a target ligand in an intracellular environment, classified in class 702, subclass 20. If this group is elected, then the below summarized specie election is also required.

VII. Claim 12, drawn to a method of identifying a consensus sequence for an intracellular antibody involving selecting and aligning a plurality of the sequences of antibody light or heavy chain variable regions, classified in class 702, subclass 20.

VIII. Claim 13, drawn to a method for selecting an antibody capable of binding specifically to one or more target antigen or ligand within an intracellular environment involving selecting an antibody whose variable light chain is at least 85% homologous with a consensus sequence, classified in class 702, subclass 20.

IX. Claim 14, drawn to an intracellularly binding immunoglobulin molecule involving a variable heavy chain which exhibits 85% homology to the consensus sequence SEQ ID No 3, classified in class 702, subclass 20.

X. Claim 15, drawn to a method of selectively binding to a ligand in an intracellular environment involving contacting a molecule with a heavy chain that has at least 85% identity to the consensus sequence of SEQ ID NO: 3, classified in class 702, subclass 20.

XI. Claim 16, drawn to a library generated using selected variable heavy chain amino acid sequences, classified in class 702, subclass 20.

XII. Claim 17, drawn to a method of constructing an antibody library enriched with antibodies capable of functioning within an intracellular environment selecting an antibody framework from the Kabat database, classified in class 702, subclass 20.

XIII. Claim 18, drawn to a method of constructing an antibody library enriched with antibodies capable of functioning within an intracellular environment involving selecting an initial antibody framework, on the basis of the maximum homology with an optimum ICS sequence, classified in class 702, subclass 20.

XIV. Claim 19, drawn to a method of producing immunoglobulin molecules involving constructing an antibody library and contacting members with target ligands, classified in class 702, subclass 20.

Inventions I-XIV are directed to related subject matter of antibodies, immunoglobulins, and consensus sequences. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, group I is drawn to a method of identifying a consensus sequence for an intercellular antibody involving creating a database. Group II is drawn to a method of identifying a consensus

sequence for an intercellular antibody involving constructing frequency distributions. Group III is drawn to a method of predicting whether an antibody is a functioning intracellular antibody involving calculating the difference between the mean value of the VIDA distribution and the product between D and the standard deviation of the VIDA distribution, obtaining the parameter S_{intra}. Group IV is drawn to a method of conferring upon an immunoglobulin molecule the ability to function within an intracellular antibody involving modifying, by site-specific mutagensis, at least one amino acid residue located in position defined by said optimum ICS. Group V is drawn to an intracellularly binding immunoglobulin molecule. Group VI is drawn to a method of selectively binding to a ligand in an intracellular environment involving contacting a molecule comprising a consensus sequence with a target ligand in an intracellular environment. Group VII is drawn to a method of identifying a consensus sequence for an intracellular antibody involving selecting and aligning a plurality of the sequences of antibody light or heavy chain variable regions. Group VIII is drawn to a method for selecting an antibody capable of binding specifically to one or more target antigen or ligand within an intracellular environment involving selecting an antibody whose variable light chain is at least 85% homologous with a consensus sequence. Group IX is drawn to an intracellularly binding immunoglobulin molecule involving a variable heavy chain which exhibits 85% homology to the consensus sequence SEQ ID No 3. Group X is drawn to a method of selectively binding to a ligand in an intracellular environment involving contacting a molecule with a heavy chain that has at least 85% identity to the consensus sequence of SEQ ID NO: 3. Group XI is drawn to a library generated using

selected variable heavy chain amino acid sequences. Group XII is drawn to a method of constructing an antibody library enriched with antibodies capable of functioning within an intracellular environment selecting an antibody framework from the Kabat database. Group XIII is drawn to a method of constructing an antibody library enriched with antibodies capable of functioning within an intracellular environment involving selecting an initial antibody framework, on the basis of the maximum homology with an optimum ICS sequence. Group XIV is drawn to a method of producing immunoglobulin molecules involving constructing an antibody library and contacting members with target ligands.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

One of Two Group II Election of Species

This application contains claims directed to the following patentably distinct species of a consensus sequence:

A) VH consensus sequence

B) VL consensus sequence

The species are independent or distinct because each sequence is a unique sequence having unique structures and functions.

Currently, claims 3-5 are generic.

Two of Two Group II Election of Species

This application contains claims directed to the following patentably distinct species of a Chothia numbering, which indicates positions of amino acids in a consensus sequence: S-21, C-22, S-25, G-26, M-32, W-36, P-41, L-45, E-46, D-72, Q81, L-82c, E-85, D-86, A-88, Y-90, C-92, W-103, G-104, G-106, T-107, T-110, V-111, S-112, G-16, C-23, W-35, G-57, G-64, S-65, S-67, 1-75, D-82, Y-86, C-88, T-102, K-103, Q-1, V-2, Q-3, L-4, S-7, G-8, G-9, G10, V-12, P-14, G-15, S-17, L-18, R-19, L-20, S-21, C-22, A-24, S-25, G-26, F-27, T-28, F-29, Y-31a, M-32, W-36, R-38, Q-39, A-40, P-41, G-42, K-43, G-44, L-45, E-46, W-47, V-48, S-52, G-54, Y-58, Y-59, A-60, D-61, S-62, V-63, K-64, G-65, R-66, F-67, T-68, 1-69, S-70, R-71, D-72, N-73, S-74, N-76, T-77, L-80, Q81, M-82, L-82c, R-83, A-84, E-85, D-86, T-87, A-88, Y-90, C-92, A-93, W-103, G-104, G-106, T-107, L-108, V-109, T-110, V-111, S-112, S-113, T-5, P-8, G-16, 1-21, C-23, W-35, Y-36, Q-37, P-40, G-41, P-44, 1-48, S-56, G-57, S-63, G-64, S-65, S-67, G-68, L-73, T-74, 1-75, D-82, A-84, Y-86, C-88, T-102, K-103. The species are independent or distinct because each numbering indicates unique positions for amino acids which are unique sequences having unique structures and functions.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Currently, claim 3 is generic.

Group V Election of Species

This application contains claims directed to the following patentably distinct species of a immunoglobulin molecule described by a consensus sequence:

A) SEQ ID NO: 41

B) SEQ ID NO: 42

The species are independent or distinct because each sequence is a unique sequence having unique structures and functions.

Currently, claim 10 is generic.

Group VI Election of Species

This application contains claims directed to the following patentably distinct species of a immunoglobulin molecule described by a consensus sequence:

A) SEQ ID NO: 41

B) SEQ ID NO: 42

The species are independent or distinct because each sequence is a unique sequence having unique structures and functions.

Currently, claim 11 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim

is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Sims, whose telephone number is (571)-272-7540.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Andrew Wang can be reached via telephone (571)-272-0811.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the Central PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The Central PTO Fax Center number is (571)-273-8300.

Any inquire of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (571)-272-0549.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

13 May 2006

JOHN S. BRUSCA, PH.D
PRIMARY EXAMINER